EG&G ER Department
Rocky Flats Plant

(07/11/90)

ER DEPARTMENT DATA ASSESSMENT SUMMARY REPORT FORM

Batch No. 9006L596 **Site** Solar Ponds

Laboratory Roy F. Weston - Lionville **No. of Samples/Matrix** 2/Water

SOW # 10/86 (Rev. 2/88) **Reviewer Org.** TechLaw, Inc.

Sample Numbers SW095W053090AAA, SW095W053090TAA

Data Assessment Summary

		VOA	Comments
1.	**Holding Times**	V	
2.	**GC/MS Tune/Instr. Perf.**	V	
3.	**Calibrations**	A	Action Items 1,2; Comments 1,2
4.	**Blanks**	A	Action Item 3
5.	**Surrogates**	V	
6.	**Matrix Spike/Dup.**	V	
7.	**Other QC**	X	Comments 3,4
8.	**Internal Standards**	V	
9.	**Compound Identification**	V	
10.	**System Performance**	V	
11.	**Overall Assessment**	A	Data acceptable with qualifications.

V = Data had no problems.
A = Data acceptable but qualified due to problems.
R = Data rejected.
X = Problems, but do not affect data.

Data Quality: Data contained in this batch were reviewed and found to be acceptable with qualifications. Acceptable, qualified data may be used provided that individual values impacted by the "Action Items" listed below are appropriately flagged. (Refer to attached Data Summary Tables.)

By _____

Date 10/28/91

6L596/voa

Action Items: 1) In the initial calibration on 5/30/90, Trichloroethene's and Acetone's %RSD exceeded 30%. Therefore the positive result for Trichloroethene in sample SW095W053090AAA is estimated (J). The positive result for Acetone in this sample would be estimated (J) if not for blank contamination. See Action Item 3.

2) Due to a large interfering peak, it appears that manual quantitation of Chloromethane, Vinyl Chloride, Bromomethane, and Chloroethane in all calibration standards was performed. However, on the quantitation report submitted for the 150 ppb standard in the initial calibration the raw data RRF values did not agree with the RRFs on Form 6A. Apparently, the RRFs on Form 6A were manually quantitated, and the raw data was for the unmanipulated values. Consequently, the calibrations of these compounds are questionable and, therefore, all non-detected results for them are estimated and undetected (UJ) in all samples.

3) As a result of method blank contamination, the positive Acetone result in sample SW095W053090AAA and the positive Methylene Chloride results in both samples are estimated and undetected (UJ) according to the Functional Guidelines 10x rule.

Comments: 1) In the initial and continuing calibrations, several compounds %RSDs or %Ds exceeded criteria. No action is necessary because there were no positive results for these compounds.

2) It appears that Acetone was manually quantitated in the 150 ppb standard of the initial calibration because the RRF calculated from the raw data does not match the RRF for Acetone on Form 6A. Furthermore, Acetone was manually quantitated in the 200 ppb standard and in the continuing calibration. Although the reported RRF was not reproducible, no action is taken because the RRF on Form 6A is assumed to be correct.

3) Various parts of the batch were illegible due to poor copying quality.

4) The Chain-of-Custody (COC) reported that VOA samples were leaking upon arrival; however, because of poor copying quality on the COC, it is undeterminable which sample was affected.

Note: Data Summary Tables are attached.

William T Frea — 7/17/90

Reviewer Signature — Date

TABLE #: 9006L596

SITE NAME: Solar Ponds

CLP VOLATILE ORGANIC ANALYSIS: Low Water

ANALYTICAL RESULTS (ppb)

Sample Number		VBLK83	SW095W0530-	SW095W0530-							
			90AAA	90TAA							
Sampling Date			05/30/90	05/30/90							
Analysis Date		06/04/90	06/04/90	06/04/90							
Remarks		Method Blank									
Volatile Compound	CRQL ug/L (ppb)	DQ	DQ	DQ							
Chloromethane	10		10 UJ A	10 UJ A							
Bromomethane	10		10 UJ A	10 UJ A							
Vinyl chloride	10		10 UJ A	10 UJ A							
Chloroethane	10		10 UJ A	10 UJ A							
Methylene chloride	5	3 ppb	5 UJ A	5 UJ A							
Acetone	10	7 ppb	10 UJ A	10 U A							
Carbon disulfide	5		5 U V	5 U V							
1,1-Dichloroethene	5		5 U V	5 U V							
1,1-Dichloroethane	5		5 U V	5 U V							
1,2-Dichloroethene (Total)	5		5 U V	5 U V							
Chloroform	5		1 J A	5 U V							
1,2-Dichloroethane	5		5 U V	5 U V							
2-Butanone	10		10 U V	10 U V							
1,1,1-Trichloroethane	5		5 U V	5 U V							
Carbon tetrachloride	5		2 J A	5 U V							
Vinyl acetate	10		10 U V	10 U V							
Bromodichloromethane	5		5 U V	5 U V							
1,2-Dichloropropane	5		5 U V	5 U V							
cis-1,3-Dichloropropene	5		5 U V	5 U V							
Trichloroethene	5		5 J A	5 U V							
Dibromochloromethane	5		5 U V	5 U V							
1,1,2-Trichloroethane	5		5 U V	5 U V							
Benzene	5		5 U V	5 U V							
trans-1,3-Dichloropropene	5		5 U V	5 U V							
Bromoform	5		5 U V	5 U V							
4-Methyl-2-pentanone	10		10 U V	10 U V							
2-Hexanone	10		10 U V	10 U V							
Tetrachloroethene	5		5 U V	5 U V							
1,1,2,2-Tetrachloroethane	5		5 U V	5 U V							
Toluene	5		5 U V	5 U V							
Chlorobenzene	5		5 U V	5 U V							
Ethylbenzene	5		5 U V	5 U V							
Styrene	5		5 U V	5 U V							
Xylenes (Total)	5		5 U V	5 U V							
Total Organic Concentration (ppb)		10	8	0							

U Indicates the compound was not detected above the Required Quantitation Limit.

J Quantitation is approximate due to limitations identified during the quality control review.

E Exceeds calibration range, dilute & reanalyze.

CRQL Contract Required Quantitation Limit in Micrograms per Liter (ug/L), Parts per billion (ppb).

DQ Data Qualifier

V Valid

A Acceptable with qualifications

R Rejected

2

Custody Transfer Record/Lab Work Request

WESTON

WESTON Analytics Use Only
9006L596

Client E&G
Work Order 2029-38-01-0000
Date Rec'd. 6/1/90 [redacted] 6/90
RFW Contact Josie
Client Contact/Phone [redacted]

Refrigerator#	1	3	3	3
#/Type Container	2-GL	1 PE	1 PE	1 PE
Volume	40ml	1 l	1 l	1 l
Preservative	NONE	HNO_3	HNO_3	NaOH
ANALYSES REQUESTED	VOA	TOTAL METALS	DISS METALS	CN⁻

WA Use Only Lab ID	Client ID	Matrix	Date Collected	VOA	TOTAL METALS	DISS METALS	CN
001	SW095WO [redacted]	W	5/30/90	X	X		X
002	SW095WO [redacted]	W	5/30/90			X	
003	SW095WO [redacted]	W	5/30/90	X ← 2 VOAS HAVE AIR BUBBLES			

full CLP

Matrix:
S - Soil
SE - Sediment
SO - Solid
W - Water
O - Oil
A - Air
WI - Wipe
DS - Drum Solids
DL - Drum Liquids
F - Fish
L - EP/TCLP Leachate
X - Other

Special Instructions:

Item/Reason	Relinquished by	Received by	Date	Time	Item/Reason	Relinquished by	Received by	Date	Time
all	fedex	[illegible]	6/1/90	9:20					

WESTON Analytics Use Only

Samples Were:
1 Shipped or Hand-Delivered
NOTES:

2 Ambient or Chilled
NOTES:

3 Received Broken/Leaking (Improperly Sealed)
Y N
NOTES: SEE SIDE

4 Properly Preserved
Y N
NOTES:

5 Received Within Holding Times
Y N
NOTES:

COC Tape Was:
1 Present on Outer Package Y N
2 Unbroken on Outer Package Y N
3 Present on Sample Y N
4 Unbroken on Sample Y N
NOTES:

COC Record Was:
1 Present Upon Receipt of Samples Y N

Discrepancies Between Sample Labels and COC Record? Y N
NOTES:

RFW 21-21-001/A-12/88

7-115

EG&G ER Department
Rocky Flats Plant

(09/21/90)

ER DEPARTMENT DATA ASSESSMENT SUMMARY REPORT FORM

Batch No. 9006L596 **Site** Area 6 - Solar Ponds

Laboratory Roy F. Weston - Lionville **No. of Samples/Matrix** 2/Water

SOW # 7/87 **Reviewer Org.** TechLaw, Inc.

Sample Numbers SW095W053090AAA (total and soluble)

Data Assessment Summary

		ICP	AA	Hg	CN	Comments
1.	Holding Times	V	V	V	V	
2.	Calibrations	V	V	V	V	
3.	Blanks	A	A	V	V	Action Items 1-3
4.	ICP Interference Check Sample	V	N/A	N/A	N/A	
5.	Lab Control Sample Results	A	V	V	V	Action Item 8
6.	Duplicate Sample Results	A	A	V	V	Action Item 6
7.	Matrix Spike Sample Results	A	A	V	V	Action Items 4-5
8.	Method of Standard Addition	N/A	V	N/A	N/A	
9.	Serial Dilution	A	N/A	N/A	N/A	Action Item 7
10.	Sample Verification	V	X	V	V	Comment 1
11.	Other QC	V	V	V	V	
12.	Overall Assessment	A	A	V	V	Data valid, or acceptable with qualifications

V = Data had no problems.
A = Data acceptable but qualified due to problems.
R = Data rejected.
X = Problems, but do not affect data.
N/A = Not applicable.

Data Quality: Data contained in this batch were reviewed and found to be valid, or acceptable with qualifications. Acceptable, qualified data may be used provided that individual values impacted by the "Action Items" listed below are appropriately flagged. (Refer to attached Results Summary Tables).

Action Items: 1) All Chromium, Copper, Manganese, Vanadium, and Nickel values are estimated and undetected (UJ) because analyte values >IDL were found in the blanks.

2) The Cobalt, Zinc, and Selenium values for SW095W053090AA (soluble) are estimated and undetected (UJ) because analyte values >IDL were found in the blanks.

3) All Lithium values are estimated (J) because the pre-digestion matrix spike recovery criteria were not met.

4) All Arsenic non-detects are estimated and undetected (UJ) because the post-digestion matrix spike recovery criteria were not met.

5) All Thallium and Silver non-detects are estimated and undetected (UJ) because the pre-digestion matrix spike recovery criteria were not met.

6) The Zinc and Selenium values for SW095W053090AAA (total) are estimated (J) because the duplicate precision criteria were not met.

7) All Magnesium values are estimated (J) because the ICP serial dilution recovery criteria were not met.

8) All Strontium values are estimated (J) because the laboratory control sample recovery criteria were not met.

Comments: 1) The Cesium IDL was greater than the CRDL.

Note: Data Summary Tables are attached.

Robert J. Hull
Reviewer Signature

9/26/90
Date

ANALYSIS DATES

for

BATCH NO. 9006L596

SAMPLE ID	ICP Analysis Date	* See below Analysis Date	As AA Analysis Date	Pb AA Analysis Date	Se AA Analysis Date	Tl AA Analysis Date	Hg CVAA Analysis Date	CN Analysis Date	Cs Analysis Date
SW095W053090AAA (total)	07/18/90		07/16/90	07/16/90	07/16/90	07/23/90	06/19/90	06/06/90	07/22/90
SW095W053090AAA (soluble)	07/18/90		07/16/90	07/16/90	07/16/90	07/23/90	06/19/90	06/06/90	07/22/90

* The following ICP elements were run on an alternate date:

006L596A/eg25j

CLP WATER INORGANIC ANALYSIS

TABLE #: 9006L596

SITE NAME: Area 6 - Solar Ponds

ANALYTICAL RESULTS (ug/L)

Sample Location						
Sample Number			SW095W053090AAA		SW095W053090AAA	
Sample Date			05/30/90		05/30/90	
Remarks			total		soluble	
Inorganic Analyte		DL ug/L		DQ		DQ
Aluminum	Al	200	228	V	89.6	V
Antimony	Sb	60	34.6	V	22.0 U	V
Arsenic	As	10	2.0 UJ	A	2.0 UJ	A
Barium	Ba	200	133	V	136	V
Beryllium	Be	5	1.0 U	V	1.0 U	V
Cadmium	Cd	5	3.0 U	V	3.0 U	V
Calcium	Ca	5000	241000	V	248000	V
Cesium	Cs	1000	2500 U	V	2500 U	V
Chromium	Cr	10	2.2 UJ	A	2.2 UJ	A
Cobalt	Co	50	4.0 U	V	4.3 UJ	A
Copper	Cu	25	10.2 UJ	A	10.2 UJ	A
Iron	Fe	100	210	V	44.0 U	V
Lead	Pb	5	3.6	V	3.0 U	V
Lithium	Li	100	276 J	A	283 J	A
Magnesium	Mg	5000	63100 J	A	65000 J	A
Manganese	Mn	15	16.9 UJ	A	15.9 UJ	A
Mercury	Hg	0.2	0.2 U	V	0.2 U	V
Molybdenum	Mo	200	100 U	V	100 U	V
Nickel	Ni	40	9.6 UJ	A	20.4 UJ	A
Potassium	K	5000	53200	V	55200	V
Selenium	Se	5	13.8 J	A	2.7 UJ	A
Silicon	Si		5211	V	5263	V
Silver	Ag	10	3.0 UJ	A	3.0 UJ	A
Sodium	Na	5000	339000	V	349000	V
Strontium	Sr	200	1935 J	A	1998 J	A
Thallium	Tl	10	4.0 UJ	A	4.0 UJ	A
Tin	Sn	200	100 U	V	100 U	V
Vanadium	V	50	8.6 UJ	A	7.2 UJ	A
Zinc	Zn	20	116 J	A	57.4 UJ	A
Cyanide		10	10.0 U	V	N/R	

E *Estimated by the Laboratory*

U Indicates the compound was not detected above the Instrument Quantitation Limit

J Quantitation is approximate due to limitations identified during the quality control review

DL Detection Limit in Micrograms per Liter (ug/L)

N/R Not reported

DQ Data Qualifier

V Valid

A Acceptable with qualifications

R Rejected

Custody Transfer Record/Lab Work Request

WESTON

WESTON Analytics Use Only: 9006L596

Client: EG&G
Work Order: 2029-38-01-0000
Date Rec'd.: 6/1/90 Date Due: 7/16/90
RFW Contact: Josie King
Client Contact/Phone:

Refrigerator#			1	3	3	3
#/Type Container			2-GL	1 PL	1 PL	1 PL
Volume			40ml	1l	1l	1l
Preservative			NONE	HNO3	HNO3	NaOH
ANALYSES REQUESTED			VOA	TOTAL METAL	DISS METAL	CN
WA Use Only Lab ID	**Client ID/Description**	**Matrix**	**Date Collected**			
001	SW095W053090AAA	W	5/30/90	X	X		X
002	SW095W053090AAA	W	5/30/90			X	
003	SW095W053090TAA	W	5/30/90	X ← 2 VOAS HAVE AIR BUBBLES			

full CLP

Matrix: S - Soil, SE - Sediment, SO - Solid, W - Water, O - Oil, A - Air, WI - Wipe, DS - Drum Solids, DL - Drum Liquids, F - Fish, L - EP/TCLP Leachate, X - Other

Special Instructions:

Item/Reason	Relinquished by	Received by	Date	Time	Item/Reason	Relinquished by	Received by	Date	Time
All	[illegible]	[illegible]	6/1/90	920	[illegible]	[illegible]	[illegible]	6/15/90	1650
[illegible]	[illegible]	[illegible]	6/4/90	4:0	[illegible]	[illegible]	[illegible]	7/1	9:30
[illegible]	[illegible]	[illegible]	6/6/90	[illegible]	[illegible]	CAT	[illegible]	7/9	11:10
(001)	[illegible]	[illegible]	6/13/90	0930	Metals	"	CD Felice	7/23	9–
return	[illegible]	[illegible]	6/13/90	1530	Metals	CWT		8/25	2:00
(002)	[illegible]	[illegible]	6/15/90	0830					

WESTON Analytics Use Only

Samples Were:
1 Shipped (circled) or Hand-Delivered
NOTES:

2 Ambient or Chilled (circled)
NOTES:

3 Received Broken/Leaking (Improperly Sealed) Y (circled) N
NOTES: SEE SIDE

4 Properly Preserved Y (circled) N
NOTES:

5 Received Within Holding Times Y (circled) N
NOTES:

COC Tape Was:
1 Present on Outer Package Y (circled) N
2 Unbroken on Outer Package Y (circled) N
3 Present on Sample Y N (circled)
4 Unbroken on Sample Y N (circled)
NOTES:

COC Record Was:
1 Present Upon Receipt of Samples Y (circled) N

Discrepancies Between Sample Labels and COC Record? Y N (circled)
NOTES:

RFW 21-21-001/A-12/88

7-115